IN THE CLAIMS:

Please amend the Claims as follows:

1. (Original) An electrophoretic device comprising:

a separation chamber having a fluid inlet port and a fluid outlet port, with a flow path from the fluid inlet port to the fluid outlet port defining a fluid flow direction through the separation chamber;

an electrode chamber separated from the separation chamber by a porous, conductive membrane; and

electrodes positioned in the electrode chamber and operative when energized to generate an electric field gradient in the separation chamber, wherein the electrode chamber has a non-uniform configuration along at least a portion of the flow path of the separation chamber.

2. (Original) The electrophoretic device of claim 1 wherein the membrane is substantially planar.

3. (Original) The electrophoretic device of claim 1, wherein the electrode chamber has a substantially uniform height and a non-uniform width.

4. (Original) The electrophoretic device of claim 1, wherein the electrode chamber has a substantially uniform width and a non-uniform height.

5. (Original) The electrophoretic device of claim 1, wherein the electrode chamber has a non-uniform width and a non-uniform height.

6. (Original) The electrophoretic device of claim 1, wherein the electrode chamber is defined by side walls that have a hyperbolic shape.

7. (Original) The electrophoretic device of claim 1, wherein the electrode chamber is defined by a top wall that has a hyperbolic shape.

8. (Original) The electrophoretic device of claim 1, wherein the electrode chamber is defined by side walls and a top wall each having a hyperbolic shape.

9. (Original) The electrophoretic device of claim 1, further comprising molecular sieve in the separation chamber operative to shift the location at which a stationary focused band of charged analyte forms under a given set of focusing process parameters.

10. (Original) The electrophoretic device of claim 1, wherein the electrode chamber is defined by one or more non-linear walls.

11. (Currently Amended) The electrophoretic device of claim 10, wherein the one or more non-linear walls of the electrode chamber are curved along the direction of flow.

12. (Original) The electrophoretic device of claim 10, wherein the electrode chamber has a substantially half-circular cross-section throughout its length.

13. (Original) The electrophoretic device of claim 1, wherein the separation chamber further comprises molecular sieve.

14. (Original) The electrophoretic device of claim 13, wherein the molecular sieve comprises a gel selected from the group consisting of organic gels, inorganic gels, fixed gels and soluble gels.

15. (Original) The electrophoretic device of claim 14, wherein the gel comprises molecules having a molecular weight of between about 2000 and about 100,000.

16. (Original) The electrophoretic device of claim 13, wherein the molecular sieve comprises zeolites.

17. (Currently amended) The electrophoretic device of claim 1, wherein the electrodes comprise more than two electrodes. ~~a pair of electrodes located proximate the ends of the electrode chamber.~~

18. (Original) The electrophoretic device of claim 1, wherein the electrode chamber is configured to provide an electric field gradient comprising multiple linear segments having different slopes.

19. (Original) The electrophoretic device of claim 18, wherein the electrode chamber comprises four electrodes.

20. (Original) The electrophoretic device of claim 1, wherein the separation chamber has a substantially uniform height and a non-uniform width or a substantially uniform width and a non-uniform height or a non-uniform width and a non-uniform height.

21. (Original) A processing system comprising:

a first sample treatment device having a fluid outlet port;

a second sample treatment device having a fluid inlet port and optionally having at least one operative fluidic requirement different from a corresponding operative fluidic requirement of the first sample treatment device; and

an electrophoretic device comprising

a separation chamber having a fluid inlet port in fluid communication with the fluid outlet port of the first sample treatment device and a fluid outlet port in fluid communication with the fluid inlet port of the second sample treatment device, with a flow path from the fluid inlet port of the separation chamber to the fluid outlet port of the separation chamber defining a fluid flow direction through the separation chamber, and

electrodes operative to generate an electric field gradient in the separation chamber.

22. (Original) The processing system of claim 21 in which the electrode chamber of the electrophoretic device is configured to provide an electric field gradient comprising multiple linear segments having different slopes.

23. (Original) The processing system of claim 22 in which the electrode chamber comprises 4 electrodes.

24. (Original) The processing system of claim 21, comprising multiple electrophoretic devices in fluid communication with each other between the first sample treatment device and the second sample treatment device.

25. (Original) The processing system of claim 24, wherein the electrophoretic devices are combined in parallel, serially and/or both.

26. (Currently amended) The processing system of claim 21, wherein the electrophoretic device further comprises an electrode chamber separated from the separation chamber by a permeable membrane, the electrodes being positioned in the electrode chamber[~~[,]~~] .

27. (Currently amended) The processing system of claim 26 wherein the permeable membrane is substantially planar~~[[.]]~~ .

28. (Original) The processing system of claim 26 wherein the electrode chamber has a non-uniform configuration operative to establish a gradient in an electric field in the separation chamber, generated by the electrodes.

29. (Original) The processing system of claim 26, wherein the electrode chamber has a substantially uniform height and a non-uniform width or a substantially uniform width and a non-uniform height or a non-uniform width and a non-uniform height.

30. (Original) The processing system of claim 26, wherein the electrode chamber is defined by side walls that have a hyperbolic shape or a top wall that has a hyperbolic shape.

31. (Original) The processing system of claim 28, wherein the electrode chamber is defined by side walls and a top wall, at least one of the walls having a hyperbolic shape along the direction of flow.

32. (Original) The processing system of claim 21, wherein the electrode chamber is defined by one or more non-linear walls.

33. (Currently Amended) The processing system of claim 32, wherein the one or more non-linear walls of the electrode chamber are curved along the direction of flow.

34. (Original) The processing system of claim 32, wherein the electrode chamber has a substantially half-circular cross-section along the direction of flow.

35. (Original) The processing system of claim 21, further comprising molecular sieve in the separation chamber operative to shift the location at which a stationary focused band of charged analyte forms in the separation chamber under a given set of focusing process parameters.

36. (Original) The processing system of claim 35, wherein the molecular sieve comprises a gel selected from the group consisting of organic gels, inorganic gels, fixed gels and soluble gels.

37. (Original) The processing system of claim 35, wherein the gel comprises molecules having a molecular weight of between about 2000 and about 100,000.

38. (Original) The processing system of claim 35, wherein the molecular sieve comprises zeolites.

39. (Original) The processing system of claim 21, wherein the electrodes comprise a pair of electrodes.

40. (Original) The processing system of claim 39, wherein each electrode of the pair of electrodes is located proximate a corresponding end of the separation chamber.

41. (Original) The processing system of claim 21, wherein the electrodes comprise an electrode array.

42. (Original) The processing system of claim 21, wherein the separation chamber is non-uniform.

43. (Original) The processing system of claim 42, wherein the electrode chamber has a uniform cross-section flow channel.

44. (Original) The processing system of claim 42, wherein the separation chamber has a substantially uniform height and a non-uniform width.

45. (Original) The processing system of claim 42, wherein the separation chamber has a substantially uniform width and a non-uniform height.

46. (Original) The processing system of claim 42, wherein the separation chamber has a non-uniform width and a non-uniform height.

47. (Original) The processing system of claim 44, wherein the separation chamber is defined by side walls that have a hyperbolic shape.

48. (Original) The processing system of claim 45, wherein the separation chamber is defined by a top wall that has a hyperbolic shape.

49. (Original) The processing system of claim 46, wherein the separation chamber is defined by side walls and a top wall that each has a hyperbolic shape.

50. (Original) The processing system of claim 42, wherein the separation chamber is defined by one or more non-linear walls.

51. (Original) The processing system of claim 50, wherein the one or more non-linear walls are curved along the direction of flow.

52. (Original) The processing system of claim 50, wherein the separation chamber has a substantially half-circular cross-section throughout its length.

53. (Original) The processing system of claim 50, wherein the separation chamber comprises at least one wall of substantially hyperbolic shape in the axial direction.

54. (Original) The processing system of claim 42, wherein the porous, conductive membrane is substantially planar.

55. (Original) The processing system of claim 21, wherein the separation chamber comprises an inlet, an outlet, and an separation chamber insert that defines the separation chamber, wherein the separation chamber insert is insertable into a receptacle in the device such that the separation chamber is adjacent the membrane.

56. (Original) The processing system of claim 21, wherein the electrode chamber comprises an inlet, an outlet, and an electrode chamber insert that defines the electrode chamber, wherein the electrode chamber insert is insertable into a receptacle in the device such that the electrode chamber is adjacent the membrane.

57. (Original) A method for focusing a charged analyte comprising:

providing a device for focusing a charged analyte comprising

a separation chamber having a fluid inlet port and a fluid outlet port, with a flow path from the fluid inlet port to the fluid outlet port defining a fluid flow direction through the separation chamber,

an electrode chamber separated from the separation chamber by a porous, conductive membrane, and

electrodes positioned in the electrode chamber and operative when energized to generate an electric field gradient in the separation chamber,

wherein the electrode chamber has a non-uniform configuration along at least a portion of the flow path of the separation chamber;

introducing a fluid sample comprising analyte into the separation chamber via the inlet port; and

energizing the electrodes to establish an electric field gradient in the separation chamber to focus at least a portion of the analyte at a location along the flow path.

58. (Original) The method of claim 57, wherein the electric field gradient is changed during the course of focusing the analyte.

59. (Original) The method of claim 57, wherein the charged analyte comprises an uncharged material sorbed to or otherwise associated with a charged carrier.

60. (Original) The method of claim 57, wherein the separation chamber contains molecular sieve operative to shift the location at which a stationary focused band of a charged analyte forms under a given set of focusing process parameters.

61. (Original) The method of claim 60, wherein the molecular sieve comprises a gel.

62. (Original) The method of claim 57, wherein the charged analyte comprises a biological molecule.

63. (Original) The method of claim 62, wherein the charged analyte comprises DNA.

64. (Original) The method of claim 62, wherein the charged analyte comprises RNA.

65. (Original) The method of claim 62, wherein the charged analyte comprises protein.

66. (Original) The method of claim 57, wherein the charged analyte comprises a molecule sorbed to a detergent.

67. (Original) The method of claim 66, wherein the detergent comprises SDS.

68. (Original) The method of claim 57, wherein additional fluid comprising charged analyte is introduced into the separation chamber and focused.

69. (Original) The method of claim 57, wherein the electric field gradient is dynamically controlled.

70. (Original) A method for focusing a charged analyte comprising:

providing a device for focusing a charged analyte comprising:

a separation chamber and a non-uniform electrode chamber separated from the separation chamber by a substantially planar, porous, conductive membrane, with electrodes positioned proximate the electrode chamber and operative to generate an electric field in the electrode channel;

introducing a first liquid comprising a plurality of charged analytes into the separation chamber; and

applying an electric field gradient to the plurality of charged analytes in the first liquid to focus the plurality of charged analytes in the electric field gradient into stationary focused bands of charged analytes, each charged analyte forming a stationary focused band.

71. (Original) A method of processing a charged analyte comprising:

providing a processing system comprising:

a first sample treatment device having a fluid outlet port,

a second sample treatment device having a fluid inlet port and optionally having at least one operative fluidic requirement different from a

corresponding operative fluidic requirement of the first sample treatment device, and

an electrophoretic device comprising

a separation chamber having a fluid inlet port in fluid communication with the fluid outlet port of the first sample treatment device and a fluid outlet port in fluid communication with the fluid inlet port of the second sample treatment device, with a flow path from the fluid inlet port of the separation chamber to the fluid outlet port of the separation chamber defining a fluid flow direction through the separation chamber, and

electrodes operative to generate an electric field gradient in the separation chamber;

passing a flow of fluid from the outlet port of the first sample treatment device to the fluid inlet port of the separation chamber;

focusing at least a portion of the analyte at a location in the separation chamber, comprising establishing an electric field gradient in the separation chamber by energizing the electrodes; and to

passing a flow of fluid comprising at least a portion of the analyte from the separation chamber to the inlet port of the second sample treatment device.

72. (Original) The method of claim 71, wherein the first sample treatment device and the second sample treatment device have differing analyte concentration requirements.

73. (Original) The method of claim 71, wherein the first sample treatment device and the second sample treatment device have differing fluidic flow rate requirements.

74. (Original) The method of claim 71, wherein the separation chamber or the electrode chamber or both is non-uniform.

75. (Original) The method of claim 71, wherein the electrophoretic device further comprises an electrode chamber separated from the separation chamber by a permeable membrane, the electrodes being positioned in the electrode chamber.

76. (Original) The method of claim 71, wherein the electric field gradient is changed during the course of focusing the charged analyte.

77. (Original) The method of claim 71, wherein the charged analyte comprises an uncharged material sorbed into a charged carrier.

78. (Original) The method of claim 71, wherein the separation chamber contains molecular sieve operative to shift the location at which a stationary focused band of a charged analyte forms under a given set of focusing process parameters.

79. (Original) The method of claim 80, wherein the molecular sieve comprises a gel.

80. (Original) The method of claim 71, wherein the charged analyte comprises a biological molecule, DNA, RNA or a protein.

81. (Original) The method of claim 71, wherein the charged analyte comprises a molecule sorbed to a detergent.

82. (Original) The method of claim 81, wherein the detergent comprises SDS.

83. (Original) The method of claim 71, wherein additional fluid comprising charged analyte is introduced into the processing system.

84. (Original) The method of claim 71, wherein the electric field gradient is dynamically controlled.

85. (Original) The method of claim 71, wherein the processing system comprises multiple electrophoretic devices.

86. (Original) The method of claim 85, wherein the electrophoretic devices are combined in serial, in parallel, and/or both.

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